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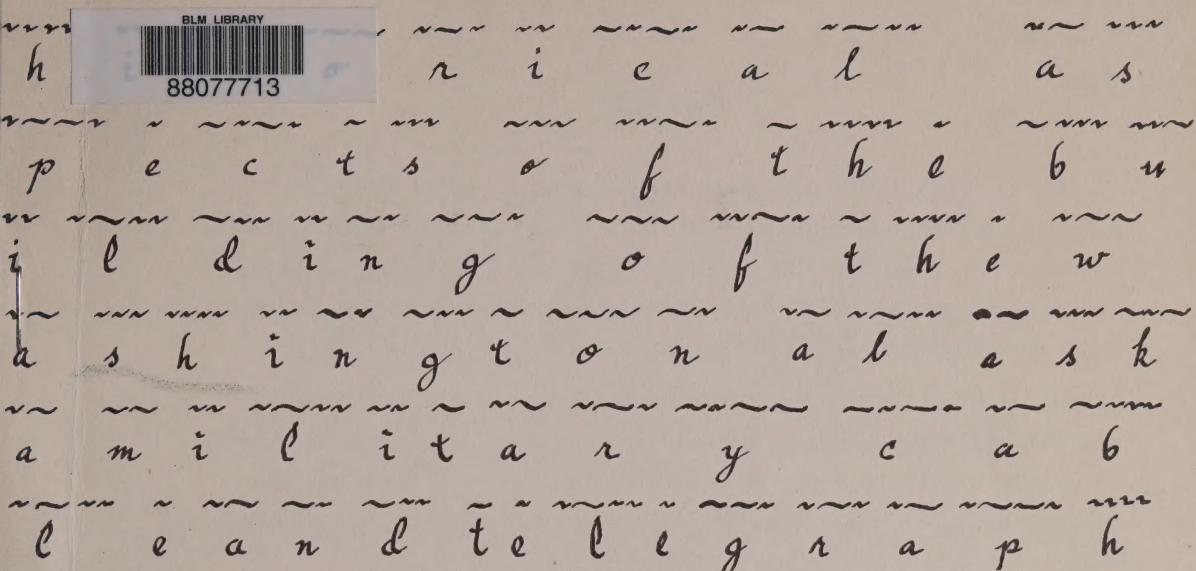
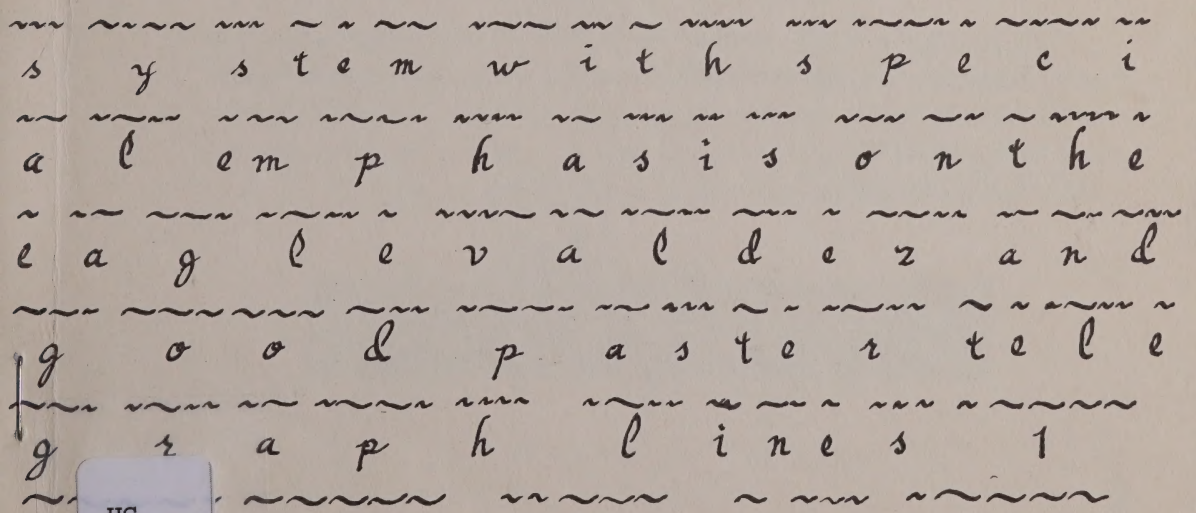


Historical Aspects of the Building of the Washington, D.C.-Alaska Military Cable and Telegraph System, with Special Emphasis on the Eagle-Valdez and Goodpaster Telegraph Lines 1902–1903

By William A. Quirk, III May 1974



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Foreword

Alaska's first direct communications link with the rest of the United States was the Washington-Alaska Military Cable and Telegraph System, built between 1900 and 1904 by the U. S. Army. During the summer of 1972, William A. Quirk, III, worked for the Bureau of Land Management and researched the historic aspects of the cable and telegraph system.

Mr. Quirk was able to cover only a small portion of the land actually traversed by the telegraph line. He found that after 70 years, some portions of the system are still standing. Some log cabins housing main telegraph line stations are intact, as are some line maintenance cabins; poles, brackets, insulators and wire are in operating condition in some locations.

Other historical artifacts and buildings related to the telegraph line may have survived. The Bureau of Land Management is publishing this report as an aid to persons doing historical research or working in areas traversed by the line. By notification of the potential presence of an historic Alaskan telegraph line, additional segments of the line may be identified and preserved. Buildings and artifacts are protected under the 1906 Antiquities Act, and the line has been nominated to the National Register of Historic Sites.

In addition to Mr. Quirk, special recognition for help in preparing this report goes to employees of BLM's Fortymile Resource Area who assisted Mr. Quirk with his job in 1972; Mr. Tom Scott of the Eagle Historical Commission and the University of Alaska Archives for use of their photographs; and other persons whose interest and enthusiasm sparked the need for this report.

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Historical Aspects of the Building of the Washington–Alaska Military Cable and Telegraph System, with Special Emphasis on the Eagle–Valdez and Goodpaster Telegraph Lines, 1902–1903

By William A. Quirk, III
Natural Resources Specialist

May 1974

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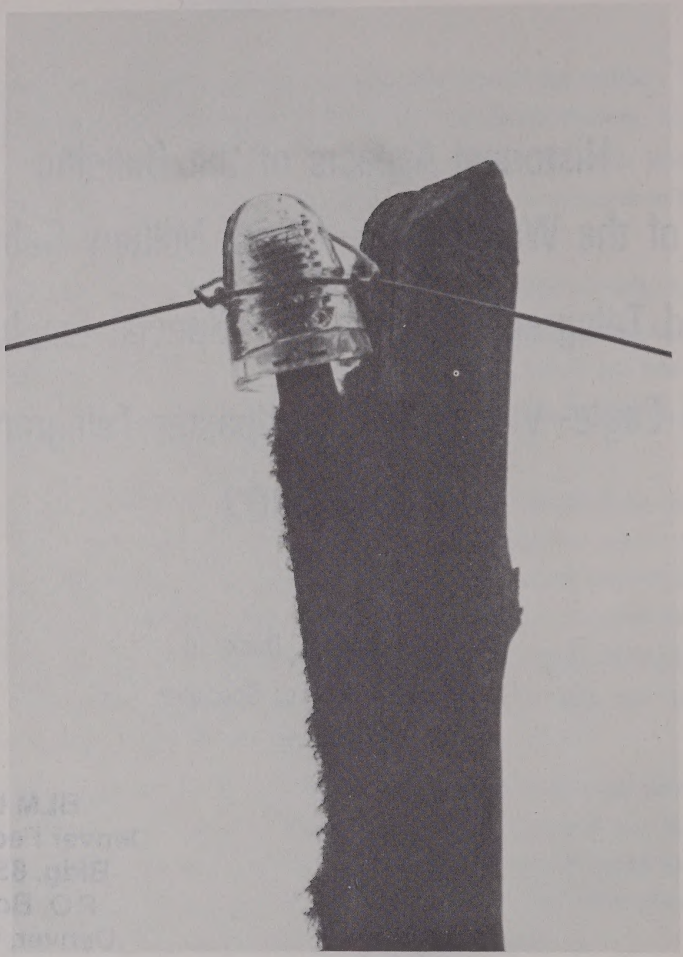

After 70 years of exposure to the elements, portions of the Washington-Alaska Military Cable and Telegraph System are in such good condition that they could be used to send telegraphic messages today.

Photo: Bureau of Land Management, 1974

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Introduction

In 1900, affairs of the District of Alaska were administered by the War Department. U. S. Army garrisons were located at Fort Davis near Nome, Fort Saint Michael, Fort Gibbon near Tanana, Fort Rampart, Fort Egbert at Eagle, Fort Liscum near Valdez, and Fort Seward at Haines (4, 6, 15)[1].

To send and receive a message along the Yukon River to Washington, D. C., generally required a year. For the Army to perform its mission, it became necessary to connect Department of Alaska Headquarters at Fort Saint Michael with all other Army posts in Alaska, by military telegraph and cable lines (See Appendix I). The entire Alaska system then had to be tied in directly with Washington, D. C. Commercial business over the lines was to be permitted insofar as deemed equitable and in the public interest by the Secretary of War (15).

Impetus for building a telegraphic communications system throughout Alaska was created, and on May 26, 1900, Congress appropriated $405,550 for this purpose (11). The project was called "The Washington-Alaska Military Cable and Telegraph System" (WAMCATS, see Appendix II.).

First Lines Constructed

Fort Egbert at Eagle was the base for construction of the first telegraph line in Alaska. This telegraph line ran along the Yukon River for 12 miles eastward to the Canadian Border, and was completed in October 1900 (5,6). The Canadians completed their line prior to completion of the American line; their line ran north from Dawson City to meet the American line, and south from Dawson City to Whitehorse.

Messages could now be sent from Fort Egbert to Dawson and Whitehorse, then carried overland to Skagway. The telegram was then sent by mail ship to Seattle, and telegraphed from there to any part of the contiguous United States. Fort Egbert could now receive messages from the U. S. in five days at 56¢ per word.

[1]Reference numbers in Bibliography

The Trans-Canadian line to Vancouver was completed in June 1901. It was then possible to reach the United States and Washington, D.C., by telegraph directly from Fort Egbert (5). The Canadian telegraph line was poor throughout its operation, and undependable as line breaks were common. Also, it was often difficult to get messages sent promptly through the Canadian system. However, this was the first direct telegraphic communications between Alaska and Washington, D.C., though not an all-American line.

Trans-Alaska Segment Completed

During the same period of time, telegraph lines were being constructed from Nome to Fort Davis, a distance of 4 miles, and to Port Safety some 20 miles distant (See Appendix III). In 1901, the first sea cable in Alaska was laid 107 miles across Norton Sound to connect Port Safety with Fort Saint Michael. Late in the same year, the 448-mile telegraph line from Fort Saint Michael to Fort Gibbon was completed under the able leadership of Lt. George Gibbs (4, 15).

Telegraph line construction beyond Fort Gibbon toward Eagle was temporarily halted as a route had not been chosen. While telegraph lines from Headquarters, Department of Alaska, were rapidly being completed eastward to Fort Gibbon, great difficulties were encountered in the building of the Eagle-Valdez line.

Eagle–Valdez Difficulties

Telegraph line construction between Eagle and Valdez became a matter of highest priority. Line completion would bring Valdez, the Prince William Sound region, and the rich Copper River Valley into communication with the U.S. (11). The line would follow Lt. Henry Allen's all-American route to the Klondike gold fields, as opposed following the Skagway-Canada route. Lt. Allen had blazed a trail from Valdez to Eagle in 1885. In 1898-99, infantrymen led by Major Abercrombie opened the first 170 miles of Lt. Allen's trail from Valdez to Chistochina and made it usable for pack trains. The road was given the impressive title of Trans-Alaska Military Road (19).

Capt. George Burnell of the Signal Corps and his men began building the telegraph line northward from Valdez in July 1900. They built 37 miles up Keystone Canyon, across Thompson Pass, and into the Copper River Valley (15). Construction work in summer 1901 was slowed by hauling of supplies over the high and rugged Thompson Pass and by swamps in the Copper River Valley. Meanwhile, little had been done by a detachment of Army infantrymen who were supposed to be working southward from Fort Egbert. At this point in the construction of the Alaska Telegraph System, it was becoming evident that Fort Egbert and the Fortymile country was delaying completion of the entire system.

Lt. Mitchell Directs Construction

In the summer of 1901, Brigadier General A. W. Greely, head of the Signal Corps in Washington, D.C., and a famous Arctic explorer, sent a promising 21-year-old first lieutenant named William Mitchell to Fort Egbert to investigate the delays in the Alaska telegraph line to the south. Lt. Mitchell (who later became famous as Bridadier General William "Billy" Mitchell of the Army Air Corps for his predictions on the role of air power in warfare) had learned military telegraph line construction while serving in the Philippine Insurrection. He had other military experience in the Spanish-American War (13).

Lt. Billy Mitchell made his base at Fort Egbert near Eagle for the next two years (1901-1903). During this time he directed construction of the Eagle-Valdez line to the Tanana River, a distance of 153 miles, and directed the exploration and construction of some 204 miles of Goodpaster line in very difficult terrain (12, 13).

All stores and equipment — including foodstuffs, hay, oats, special sleds, harnesses and transport animals (dogs, horses, and mules) — for the telegraph line came up the Yukon in summer by boat and were unloaded at Eagle.

In the winter of 1902 horses and mules sledded foodstuffs, materials and equipment from Fort Egbert over the snow and ice to field locations along the Eagle-Valdez line to Tanana Crossing (now Tanacross), a distance of 147 miles. Billy Mitchell set to work to establish the course of the new line. First the line was surveyed, next the right-of-way was chopped, then the wire was run over the snow.

Insulators, brackets, and nails were tied to the wire every quarter of a mile in sufficient quantities for the intervening distance (14). This was done because in summer transport animals could not pack the wire and move camps in the same manner as in winter.

As summer 1902 approached, Mitchell's crew dug holes, placed poles in the ground, and elevated the wire at a record pace. On August 24, 1902, Mitchell completed the line to Tanana Crossing. He was met there by Capt. George Burnell, who built the line from Valdez (see Appendix III).

Telegraphic messages could now be sent from Prince William Sound and Valdez through the Fortymile country to Eagle, then retelegraphed over the Canadian line to Vancouver and Seattle. Telegraphic communications from Southeast Alaska funneled through Skagway and Whitehorse and down the Canadian line after a new submarine cable was laid from Juneau to Skagway in summer 1902. The remaining link needed in the Alaska Telegraph Land System was to connect Fort Gibbon and Baker with Eagle.

Remaining Segment Stalled

Preparations were being made in 1902 at Fort Egbert for the final work, the joining of the Fort Egbert - Fort Liscum line to the line from Fort Saint Michael which at this time extended to Baker on the Tanana River.

Billy Mitchell made reconaissance to determine where the line should join. On January 1, 1903, he mushed from Eagle to the confluence of the Goodpaster and Tanana Rivers, thus discovering the route along the Goodpaster drainage. An excellent course for the line had been found (14).

Mitchell and his crew mushed back to Eagle, and he began mobilizing his men. They sledded some 300 tons of supplies 95 miles to the head of the Goodpaster River in preparation for building the line. Work was begun in both directions from this point (now called Summit Station), i.e., from Ketchumstuk (the tapoff on the Eagle-Valdez line) to Summit, and from Summit to Big Delta. By the last of April 1903, the wire had been run for the entire distance from Ketchumstuk to the mouth of the Goodpaster River. Mitchell expected to meet the party working up the Tanana River, but it had not been able to get within 65 miles of that point due to insurmountable obstacles (14).

Race Against Funding Deadline

Because the federal appropriation for the Washington-Alaska Military Cable and Telegraph System ran out on June 30, 1903, Lt. Mitchell was determined to finish the last link in the line by that date.

Sufficient supplies and material had been left at the Goodpaster River in the event the party working up the Tanana River did not reach Mitchell's working party. Mitchell's crew was ordered to build boats from whip-sawed lumber at Central Station and as soon as the ice on the Goodpaster River broke up, to move supplies down the river to the Tanana River. Pack trains were also sent to cooperate in hauling supplies down the Tanana River.

During the month of May, Mitchell's parties with their pack trains were working between Ketchumstuk and the mouth of the Goodpaster River, putting in poles and elevating the wire. All stations had been chosen, and caches of rations for the working parties and forage for the animals were in place. In addition, a year's supplies for three men and one dog team had been carried to each cache along the entire route for maintenance after the line was built (14).

Mitchell's parties had to reach the Salcha River, some 65 miles away, before the June 30 deadline, and the final run down the Tanana River began on May 31, 1903. Work progressed rapidly in spite of numerous obstacles and serious problems. The crews' meat ran out, but they obtained caribou and bear meat as substitutes. Mosquitos were nearly intolerable for both men and animals, and long smoky fires were built to keep the insects away (14). The animals had to be driven from these fires so they could feed. Getting the boats through the Bates Rapids on the Tanana River took special care. On June 10, when the line was half-finished, a forest fire more than 250 miles long burned in the direction of the line. After June 10, the men worked through the fire, and in some places carried the wire through the smoking embers by galloping through on a mule (14).

On June 27, 1903, near the Salcha River, Lt. Mitchell met Lt. Gibbs, who was working up the Tanana River from Fairbanks. Mitchell made the final connection in the Trans-Alaska Telegraph System.

In Mitchell's own words, "Alaska was now open to civilization." He said, "No longer was it the land of the unknown, sealed tight by the God of everlasting snow and frost. We had forced open the portal with which he shut out the white man from the North."

The Trans-Alaska Telegraph System comprised some 1,506 miles of overland lines and a few hundred miles of submarine cable (see Appendix IV). Telegraphic messages could be sent to Eagle from Nome and Fort Saint Michael on the Bering Sea; up the Yukon and Tanana Rivers to Fort Gibbon, then Fairbanks; and from Prince William Sound and Valdez. From Eagle these messages were channeled through the Canadian line to Vancouver and Seattle, and on to Washington, D.C., New York and the rest of the United States.

Historical Notes

Fort Egbert (6), the remnants of which are included in the Eagle Historic District which is on the National Register of Historic Places, served as the base of operations for the first telegraph line construction in Alaska, and had the first Alaskan telegraph communications with Washington, D.C. Fort Egbert was also a base for construction of the Goodpaster line segment, which was the final link in the Trans-Alaska Telegraph System.

All the telegraph lines had been constructed in just three years, one month, and one day -- truly an impressive achievement for the baby Signal Corps (11). The work accomplished by members of the Signal Corps in building the Trans-Alaska Telegraph System must be considered no less than phenomenal. The work was led by Capt. George Burnell and Lts. William Mitchell and George Gibbs, and, at various times, by the 3rd, 7th, 8th, 10th, and 13th Infantries (15).

The line builders faced tremendous hardships and difficulties. Supplying all materials over Interior Alaska in winter by sledding or pack animals was a tremendous task in itself, over the roughest, most primitive trails in undeveloped country. There were not 12 miles of wagon road along the entire line; a large section along the Tanana River Valley was marked as "Unexplored" on maps.

Wire, insulators, brackets, nails, foodstuffs, hay, oats and other supplies were often transported long distances. All supplies and equipment for the 428-mile Eagle-Valdez Telegraph Line were hauled 168 miles south from Eagle or 260 miles north from Valdez to Tanana Crossing. In constructing the Good-

paster Telegraph Line, Billy Mitchell's crew transported supplies 273 miles from Eagle.

In 1903 Congress appropriated $485,000 for construction of submarine cables from Juneau to Sitka and from Sitka to Seattle, a total distance of 1,377 miles (8). It was not until 1904 that these lines were completed. Another appropriation in April 1904 provided for construction of a cable from Sitka to Valdez, a distance of 600 miles. This line was laid in the Gulf of Alaska and was completed in October 1904, thus completing an all-American line of telegraph communications (see Appendix IV). The all-American Washington-Alaska Military Cable and Telegraph System became a reality.

The original submarine cable laid in Norton Sound in 1901 was ruptured when the ice went out in summer 1902. After private companies gave up, the Signal Corps continued to work on wireless radio across the Norton Sound. In August 1903 Capt. Wildman succeeded in making contact with St. Michael from Port Safety 107 miles away (11). This achievement represented the first long distance wireless telegraphy in the United States.

Maintenance and Messages

Military records indicate land lines in Alaska were estimated to have cost the government $617 per mile, while submarine cables cost on the order of $452 per mile (8). The 455 miles of telegraph lines in the Fortymile country cost the government $280,735 for construction.

Annual maintenance of these telegraph lines cost the government $6.25 per mile (8). During one of the early years, there were more than 200 interruptions of telegraph service, with causes divided almost equally between blizzards, forest fires, sleet storms, high winds, and vandalism by Indians.

The line was maintained by detachments of soldiers stationed at log cabins every 40 miles along the line. Each detachment was made up of one Signal Corps repairman and two assistants from the Army (11). A sled and dog team of seven dogs were used for winter transportation. Relief cabins for shelter from the frequent blizzards were located between the repair cabins. When service over the line was broken, a repairman and infantryman started out

from the cabins on each side of the break. The first man to reach the fault made repairs and awaited the arrival of the other party. After contact was established, both crews returned to their stations (11).

By September 1910, there were some 1,506 miles of land lines, 2,630 miles of submarine cables, and wireless telegraphy covering 934 miles (7). At this time and shortly thereafter, wireless telegraphy began to supplant the land and sea cable system.

Between 1903 and 1910, the original Trans-Alaska Telegraph System performed most ably. During the year ending June 30, 1906, a total of 253,338 commercial messages and 53,116 official messages were handled by the Trans-Alaska Telegraph System (8). Although this telegraph system was constructed as a military necessity for the U.S. Army, it was never intended to be used exclusively by the military. It also facilitated commerce in Alaska.

Construction of the first right-of-way for a telegraph line in Alaska is shown in this historic photo. This telegraph line ran from Eagle along the Yukon River for 12 miles to the Canadian Border, where it connected with a line from Dawson City. While the line was completed in October of 1900, the photograph is dated 1901.

Photo: National Archives

Construction camps, such as this along the Tanana River, had many luxuries. At the right is a blanket roll containing a mattress.

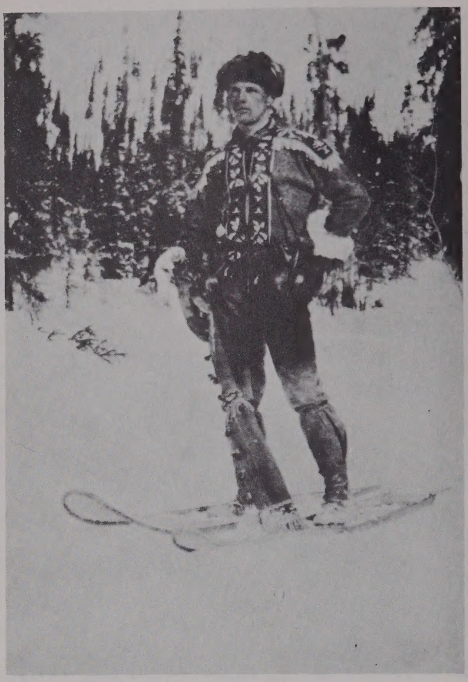
Photo: University of Alaska Archives

Lt. Cochrane's party worked on the telegraph line from Eagle to the Canadian Border. Few photos of actual telegraph line construction exist.

Photo: National Archives

Lt. William Mitchell, who had learned telegraph line construction during the Philippine Insurrection, was sent by the head of the Signal Corps to Ft. Egbert. He directed the construction of the line south from Eagle to the Tanana River (153 miles) and some 204 miles of the Goodpaster line from 1901-1903.

Photo: National Archives

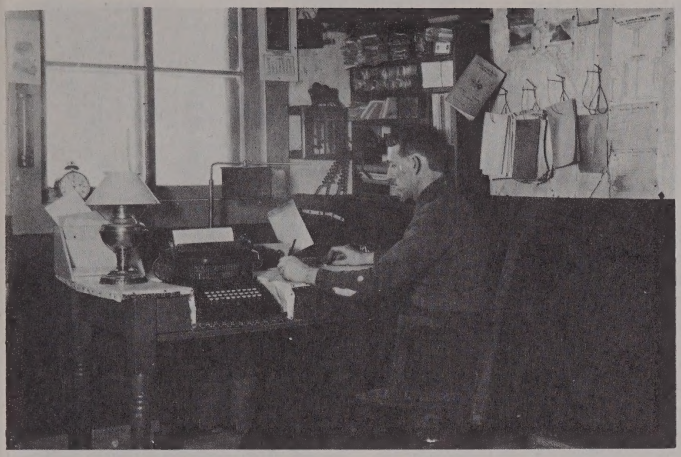


Ft. Egbert, Department of Army Headquarters for Alaska, was very new in 1901. Although these early buildings are of log construction, frame construction was more common.

Photo: University of Alaska Archives

"Beaver Dam Telegraph Station" is typical of the stations spaced along the telegraph lines. Today, the location of this station is unknown. Messages were relayed from one relay station to another.

Photo: University of Alaska Archives

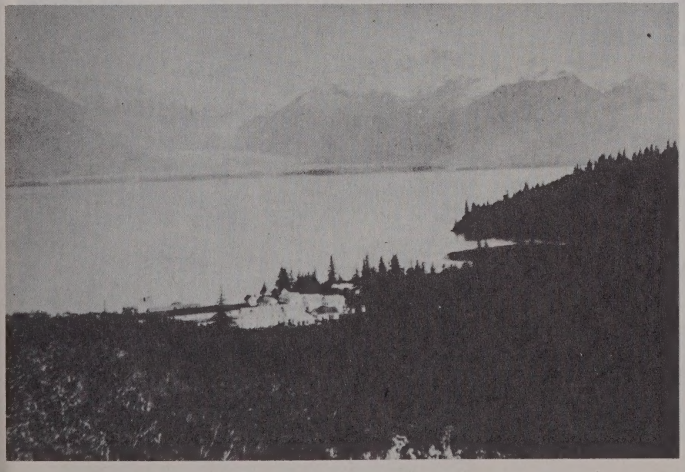


This early photo shows the interior of the main telegraph office in Eagle in January of 1913. Copies of telegraph messages typed on the typewriter shown still exist in Eagle. Many messages were of a civilian nature.

Photo: University of Alaska Archives

This building was another of the line stations, as the sign says: "U.S. Military Telegraph Office." The location of this building, with its corrugated steel roof, is not known.

Photo: University of Alaska Archives



Some 428 miles south of Ft. Egbert lies Ft. Liscum. This fort, at the present location of Old Valdez, no longer exists. Construction of the telegraph line from Eagle to Valdez was one of the most difficult feats faced in the total 1,497 miles of land lines built between 1900 and 1904.

Photo: University of Alaska Archives

After some 70 years, no one would expect cabins on the telegraph line to look this good. This particular cabin was rebuilt by a miner, though many of the U. S. Army pieces still exist. The original corrugated steel was used for the roof, and the cabin is heated by a heavy iron stove of Army vintage.

Photo: Bureau of Land Management, 1974

NOTE: For purposes of protecting the existing remains of the telegraph line and buildings, locations of photos will not be mentioned. Research has shown the items pictured to be authentic remains of telegraph line construction of the 1900-1904 era.

Some cabins are still standing in an unrepaired and unsafe condition. This cabin was one of the original line shacks.

Photo: Bureau of Land Management, 1973

Not all of the cabins fared as well. This cabin lies with pieces everywhere. The interior of the cabin contains pieces of desks and tables, window frames, rusted metal buckets and other "junk." BLM has posted a sign to ask visitors to leave the cabin as is, hoping to protect the remains under the Antiquities Act.

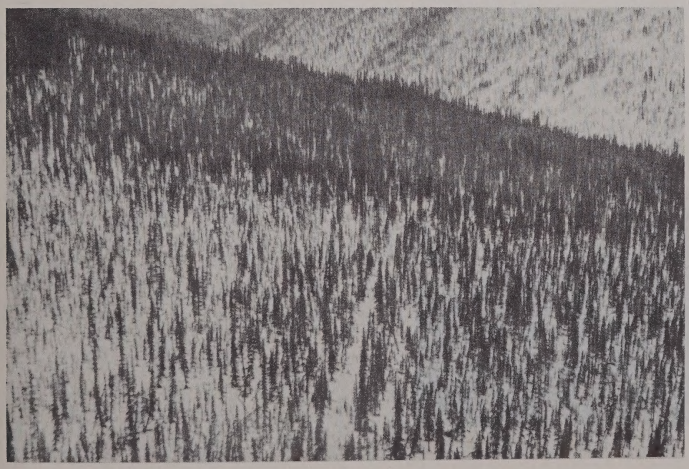
Photo: Bureau of Land Management, 1974

A BLM employee holds one of the glass insulators used on the telegraph line. Tens of thousands were sent to Alaska. While the present-day value of these insulators is little, souvenir collectors have some of these. BLM requests persons that find such insulators leave them where they were discovered, and tell BLM of the location so it can be noted and protected.

Photo: Bureau of Land Management, 1974

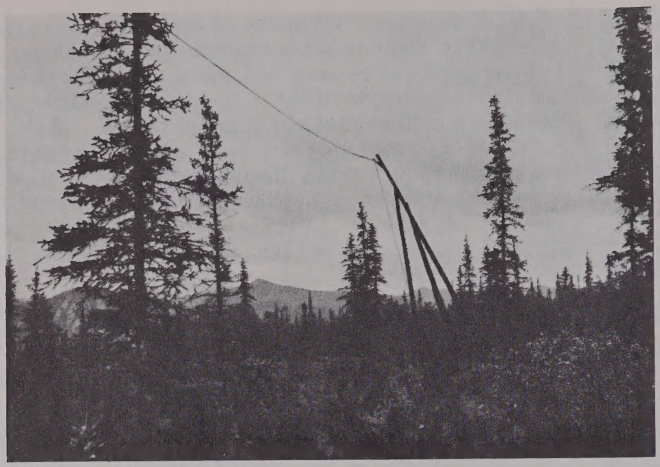
At one location, regularly-shaped mounds in the tundra revealed boxes of insulators. Rather than removing the boxes, they were left and the location was noted.

Photo: Bureau of Land Management, 1974



The right-of-way for the telegraph line is hard to spot from the air and almost impossible to find on the ground. Only snow on the ground allowed this photo, from an altitude of about 150 feet, to be taken.

Photo: Bureau of Land Management, 1973



After 70 years of exposure to the elements, there are still areas where the telegraph tripods put up in 1900-1904 are still standing, with glass insulators attached, and with wire strung between them.

While there had been rumors that some sections of line were still standing, this part of the line is in such good condition that it could still be used, as is, to send and receive telegraphic messages.

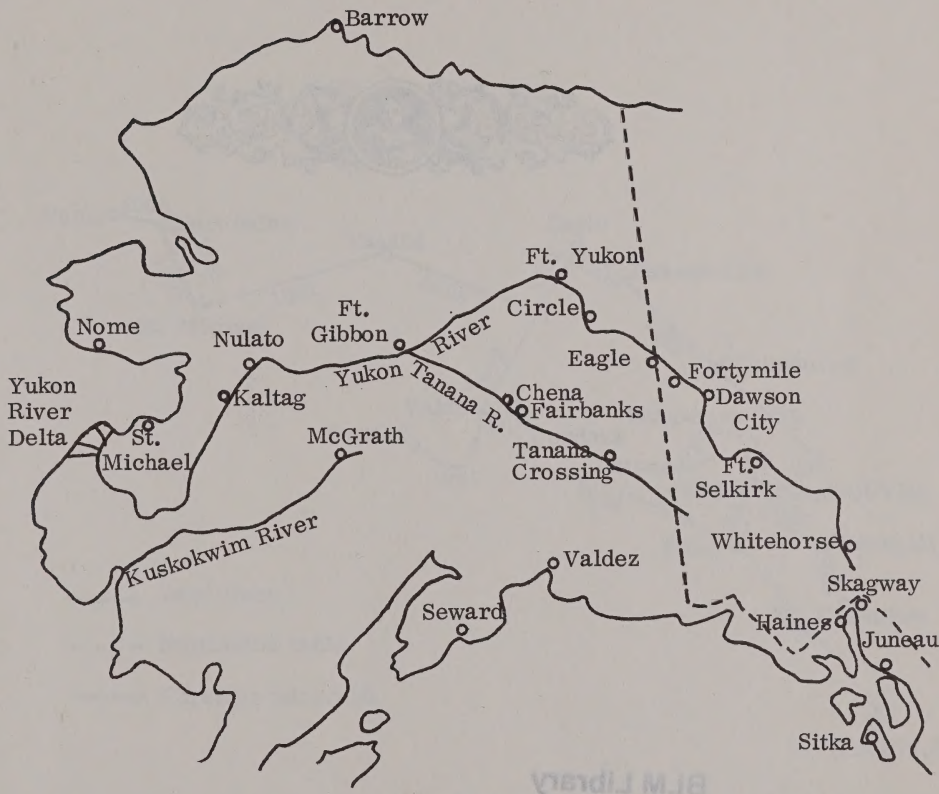
Photos: Bureau of Land Management, 1974

(EDITOR'S NOTE: Wires in photos were thickened by pencil to be more visible when printed in this report.)

Appendix

Appendix I

Important Settlements in Alaska and the Yukon Territory, 1900



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Appendix II

Sketch showing completion dates of the Washington-Alaska Military Cable and Telegraph System*

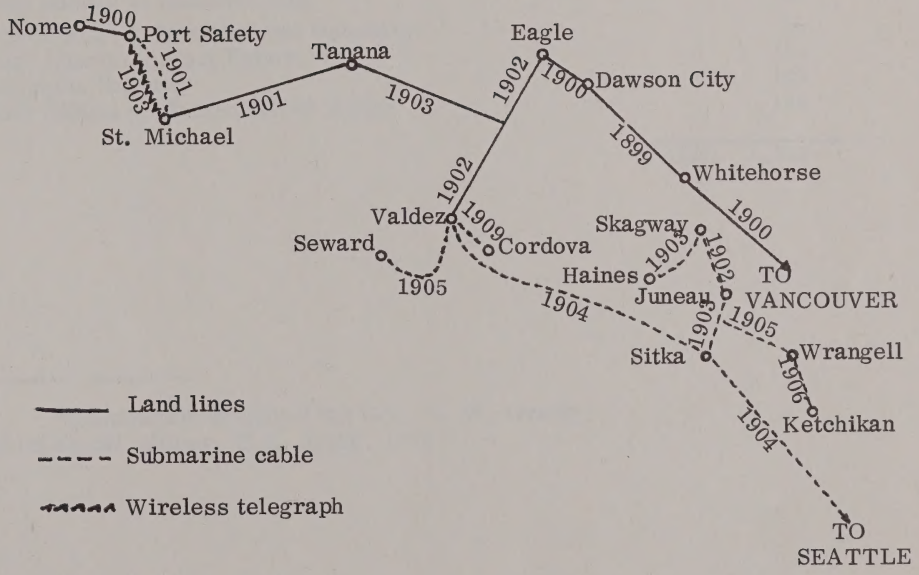

*Diagram after The U.S. Army in Alaska, Pamphlet 360-5, July 1972.

Appendix III

Table showing the amount of work completed on the Washington-Alaska Military Cable and Telegraph System (WAMCATS) as of August 24, 1902*

Sections Built	Distance (miles)
Nome to Fort Davis and Port Safety	24
Port Safety to Fort St. Michael (cable)	133
St. Michael to Fort Gibbon	251
Fort Gibbon to Rampart City	61
Fort Egbert to International Boundary	11
Fort Liscum to Fort Egbert	420
Juneau to Skagway	121
Fort Gibbon up Tanana River Valley	100
TOTAL	1,121

*Information prepared for Gen. A. W. Greely, Chief Signal Officer, U. S. Army, 1902

Appendix IV

Table showing the various stations on the cable and land lines of the Washington-Alaska Military Cable and Telegraph System (WAMCATS) and distances completed as of October 1904*

Land Line Stations

NOME-KETCHUMSTUK	Intermediate (miles)	Total (miles)
Nome	0	0
Fort Davis	4	4
Safety	20	24
St. Michael	0	24
Golsovia	35	59
Unalakleet	30	89
Old Woman	50	139
Kaltag	45	184
Nulato	40	224
Koyukuk	30	254
Grimop	20	274
Louden	30	304
Melozi	35	339
Kokrines	38	377
Birches	40	417
Fort Gibbon (Tanana)	55	472
Cosna	45	517
Baker	25	542
Tolovana	37	579
Nenana	55	634
Chena	48	682
Fairbanks	10	692
Salcha	37	729
Goodpaster	60	789
Central	32	821
Summit	58	879
Ketchumstuk	54	933
RAMPART BRANCH		
Fort Gibbon	0	0
Rapids	35	35
Rampart	40	75
Glen	35	110
Baker	15	125

EAGLE-VALDEZ	Intermediate (miles)	Total (miles)
Fort Egbert (Eagle)	0	0
Champion Creek	29	29
North Fork	39	68
Gold Greek	19	87
Ketchumstuk	11	98
Dennison Creek	30	128
Tanana Crossing	25	153
Big Tokio	31	184
Mentasta Pass	20	204
Cheslotta	20	224
Chistochina	26	250
Talsona	20	270
Gulkana	20	290
Copper Center	26	316
Tonsina	25	341
Teikhell	24	355
Saina	24	389
Keystone	19	408
Valdez	12	420
Lowe River	3	423
Fort Liscum (Valdez)	5	428
FORT EGBERT-BOUNDARY		
Fort Egbert (Eagle)	0	0
Boundary	11	11
WIRELESS SECTION		
Port Safety	0	0
St. Michael	107	107

Submarine Cable

Section	Total (miles
Seattle-Sitka	1,070
Sitka-Valdez	640
Sitka-Juneau	291
Juneau-Fort Seward (Haines)	102
Fort Seward-Skagway	21
Total submarine cable	2,124

AGGREGATE

Land lines	Miles	Total Miles
Nome-Ketchumstuk	933	
Rampart Branch	125	
Eagle-Valdez	428	
Fort Egbert-Boundary	11	
Total land telegraph lines		1,497
Wireless telegraphy (radio)		
Total wireless		107
Submarine Cable		
Total submarine cable		2,124
Total mileage in WAMCATS		3,728

*After Gen. A. W. Greely, Chief Signal Officer, U.S. Army, Washington, D.C., 1904.

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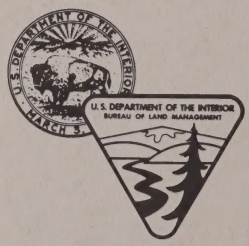

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